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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/759,759

Applicant(s)

RACHKOV, ROSSEN
ATANASSOV

Examiner

Kimberly K. McClelland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/15/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 15 requires an input mechanism mounted on the movable drive plate, which includes a sprocket and the movable drive plate. This language is unclear. If the input mechanism includes the drive plate, how is the input mechanism mounted on itself? Clarification is required. For the purposes of examination, examiner assumes the claim should read, "the input mechanism comprising a sprocket on the movable drive plate", similar to the language used in claim 10. Claims 16-23 are rejected due to their dependency on independent claim 15.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, 10-12, 15-18, and 21-22 rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,666,365 to Feldman.

6. With respect to claim 1, Feldman discloses a device feeder, including a mounting plate; a movable drive plate coupled to the mounting plate; an input mechanism mounted on the movable drive plate, the input mechanism capable of receiving the micro devices containing tapes; a drive mechanism for driving the input mechanism; and a feeder width adjustment mechanism interposed between the mounting plate and the movable drive plate for adjusting the micro device feeder system to accommodate tapes with different widths (See Figure 2).

7. As to claim 2, Feldman discloses a fine adjustment mechanism interposed between the mounting plate and the movable drive plate, the fine adjustment mechanism cooperating with the feeder width adjustment mechanism for making fine adjustments between the mounting plate and the movable drive plate (See Figure 2).

8. As to claim 3, Feldman discloses the feeder width adjustment mechanism comprises a multi-position spacer rotatably mounted to the movable drive plate, the multi-position spacer has a plurality of thicknesses, each one of the plurality of thicknesses determines one of a plurality of positions of the movable drive plate with respect to the mounting plate; and the movable drive plate includes: a securing device for securing the multi-position spacer to one or another or both of the mounting plate and the movable drive plate at the plurality of positions (See Figure 2).

9. As to claim 4, Feldman discloses the movable drive plate includes a mark; and the multi-position spacer includes a plurality of visual indicators for indicating one of the plurality of positions of the multi-position spacer when one of the plurality of the visual indicators is aligned with the mark (See Figure 2).

10. As to claim 5, Feldman discloses a robotic handling system; and wherein: the multi-position spacer is adapted to align the input mechanism with the robotic handling system (See Figure 2).

11. As to claim 10, Feldman discloses the input mechanism comprises a tape driver on the movable drive plate capable of engaging and advancing the tapes provided to the input mechanism, the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; and the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline (See Figure 2).

12. As to claim 11, Feldman discloses a tape driver on the movable drive plate capable of engaging and advancing the tapes provided by the input mechanism; and wherein: the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline and assuring positive linear movement of the tapes; and the drive mechanism is mounted on the movable drive plate to remain stationary relative to the tape driver (See Figure 2).

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13. As to claim 12, Feldman discloses the input mechanism includes: a cover tape removal mechanism secured to the movable drive plate for removing a cover tape off the tapes to expose the micro devices (See Figure 2).

14. As to claim 15, Feldman discloses a mounting plate; an alignment block slidably mounted to the mounting plate; a movable drive plate coupled to the mounting plate and slidable with respect thereto; an input mechanism mounted on the movable drive plate and movable therewith, the input mechanism capable of receiving the micro devices containing tapes, the input mechanism comprising a sprocket and the movable drive plate, the sprocket capable of engaging perforations provided in first edges of the tapes and advancing the tapes provided to the input mechanism; a drive mechanism for driving the sprocket; and a feeder width adjustment mechanism for adjusting the micro device feeder system to accommodate tapes with different widths by moving the sprocket relative to a common centerline of the tapes, the feeder width adjustment mechanism including: a multi-position spacer mounted on one or the other or both of the mounting plate and the movable drive plate and disposed between the movable drive plate and the alignment block, the multi-position spacer cooperating with the alignment block for determining a plurality of positions of the movable drive plate with respect to the mounting plate (See Figure 2).

15. As to claim 16, Feldman discloses the mounting plate includes a mounting surface formed at an angle between the mounting plate and the movable drive plate; and the alignment block includes an alignment surface formed at an angle to the mounting plate and the movable drive plate to allow the alignment block to be slidably engaged

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with the mounting surface for positioning the movable drive plate with respect to the mounting plate (See Figure 2).

16. As to claim 17, Feldman discloses the movable drive plate includes: a recess mark; a securing device; and the multi-position spacer is rotatably mounted to the movable drive plate, and includes: a plurality of thicknesses; a plurality of recesses, each one of the plurality of thicknesses determines one of the plurality of positions of the movable drive plate with respect to the mounting plate, wherein the securing device secures the multi-position spacer to the movable drive plate at the plurality of positions by engaging a respective one of the plurality of recesses; and a plurality of visual indicators for indicating one of the plurality of positions of the multi-position spacer when one of the plurality of the visual indicators is aligned with the recess mark (See Figure 2).

17. As to claim 18, Feldman discloses a robotic handling system; and wherein: the multi-position spacer is adapted to align the input mechanism with the robotic handling system (See Figure 2).

18. As to claim 21, Feldman discloses the sprocket engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; and the sprocket is movable to accommodate the plurality of centerlines while maintaining the common centerline (See Figure 2).

19. As to claim 22, Feldman discloses the sprocket engages the perforations of the tapes having a plurality of centerlines wherein the tapes have the common centerline; the sprocket is movable to accommodate the plurality of centerlines while maintaining

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the common centerline and assuring positive linear movement of the tapes; the drive mechanism is mounted on the movable drive plate to remain stationary relative to the sprocket and includes: a motor secured to the movable drive plate, a motor pulley on the motor, a sprocket shaft on the movable drive plate, a sprocket pulley on the sprocket shaft, and a belt connected to drive the sprocket pulley from the motor; and the sprocket is secured to the sprocket pulley (See Figure 2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

20. Claims 1-2 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,196,783 to Foster.

21. With respect to claim 1, Foster discloses a tape feeder, including a mounting plate (404a); a movable drive plate (404b) coupled to the mounting plate (See Figure 4C); an input mechanism (401/402) mounted on the movable drive plate (404b), the input mechanism capable of receiving the micro devices containing tapes (102; See Figure 4B); a drive mechanism for driving the input mechanism (402/403; See Figure 4A); and a feeder width adjustment mechanism (408) interposed between the mounting

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plate and the movable drive plate for adjusting the micro device feeder system to accommodate tapes with different widths (column 5, lines 17-21).

22. As to claim 2, Foster discloses a fine adjustment mechanism (405) interposed between the mounting plate (404a) and the movable drive plate (404b), the fine adjustment mechanism cooperating with the feeder width adjustment mechanism for making fine adjustments between the mounting plate and the movable drive plate (column 5, lines 17-21).

23. As to claim 10, Foster discloses the input mechanism comprises a tape driver (402) on the movable drive plate capable of engaging and advancing the tapes provided to the input mechanism, the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; and the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline (column 5, lines 17-21).

24. As to claim 11, Foster discloses a tape driver (402) on the movable drive plate capable of engaging and advancing the tapes provided by the input mechanism (401/402); and wherein: the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline and assuring positive linear movement of the tapes (column 5, lines 17-21); and the drive mechanism (402/403) is mounted on the movable drive plate (404b) to remain stationary relative to the tape driver (See Figure 4C).

25. As to claim 12, Foster discloses the input mechanism includes: a cover tape removal mechanism (401/402) secured to the movable drive plate for removing a cover tape (103) off the tapes to expose the micro devices (See Figure 4A).

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,196,783 to Foster as applied to claims 1-2 and 10-12 above, and further in view of 5,598,986 to Ando et al.

28. With respect to claim 6, Foster discloses a tape feeder, including the movable drive plate (404) includes a first guide mechanism (406) for accommodating the tapes along first edges of the tapes (See Figure 4B). However, Foster does not disclose the input mechanism includes: a guide carrier mounted to the movable drive plate for supporting the tapes; and a tape guide removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes.

29. Ando et al. discloses a component supply apparatus, including the input mechanism (B) includes: a guide carrier (W) mounted to the movable drive plate (2) for supporting the tapes; and a tape guide (X) removably mounted to the guide carrier, the

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first plurality of feature sets on the guide carrier to accommodate tapes with different widths (See Modified Figure 2A). Ando does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the tape feeder discloses by Foster. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Foster; column 5, lines 17-21). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus.

32. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,196,783 to Foster in view of U.S. Patent No. 5,598,986 to Ando et al. as applied to claims 6-7 above, and further in view of U.S. Patent No. 6,296,104 to Ito et al.

33. With respect to claim 8, Foster does not disclose the guide carrier is formed of a ferro-magnetic material; and the tape guide includes magnets for removably attaching the tape guide to the guide carrier using a magnet force created between the magnets and the ferro-magnetic material.

34. Ando et al. discloses a component supply apparatus, including attaching the guide carrier and tape guide with feature sets (See Figure 2A).

35. Ito et al. discloses an electronic component feeding apparatus, including using magnets (214) in combination with bolts (213) and openings (211b) for removably attaching plates in a guide mechanism (See Figure 29; column 19, lines 20-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic attachment means taught by Ito et al. while attaching the guide carrier and tape guide of Ando et al. together in the tape feeder of Foster. The motivation would have been to provide increased support and stability to the apparatus by improving attachment strength.

36. As to claim 9, Foster does not disclose each of the first plurality of feature sets includes a plurality of projections; and the second feature includes a set of openings formed on a bottom side of the tape guide for engaging with the plurality of projections.

37. Ando et al. discloses each of the first feature sets includes a projection (Y; i.e. bolt); and the second feature includes an opening (Z; i.e. opening) formed on a bottom side of the tape guide for engaging with the projection (See Modified Figure 2A). Ando does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the tape feeder discloses by Foster. The motivation would have been to allow the guide to be

adjustable in order to modify the apparatus to be functional with tapes of different sizes (Foster; column 5, lines 17-21). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus.

38. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,196,783 to Foster as applied to claims 1-2 and 10-12 above, and further in view of U.S. Patent No. 6,082,603 to Takada et al.

39. With respect to claim 13, Takada et al. discloses a feeding apparatus, including the input mechanism includes: a cover tape mechanism for disposing of the removed cover tape (368); and a tape-presence sensor assembly (379) disposed between the cover tape removal mechanism (210) and the cover tape mechanism (368) for detecting the removal of the cover tape off the tapes (See Figure 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Foster. The motivation would have been to better monitor the peeling and conveying of the cover tape.

40. As to claim 14, Takada et al. discloses a feeding apparatus, including the tape-presence sensor assembly includes: a slot sensor (378) mounted to the movable drive plate (50); a sensor flag plate (376) rotatably mounted to the movable drive plate (50);

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and a tape-presence sensor roller (372) rotatably mounted to the sensor flag plate (376) wherein the sensor flag plate is clear of a slot in the slot sensor (378) indicating the removal of the cover tape when the sensor flag plate (376) enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged (See Figure 27; column 29, line 62-column 30, line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Foster. The motivation would have been to better monitor the peeling and conveying of the cover tape.

41. Claims 6-7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,666,365 to Feldman as applied to claims 1-5, 10-12, 15-18, and 21-22 and 10-12 above, and further in view of 5,598,986 to Ando et al.

42. With respect to claim 6, Feldman discloses a device feeder, including the movable drive plate (404) includes a first guide mechanism (406) for accommodating the tapes along first edges of the tapes (See Figure 4B). However, Feldman does not disclose the input mechanism includes: a guide carrier mounted to the movable drive plate for supporting the tapes; and a tape guide removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes.

43. Ando et al. discloses a component supply apparatus, including the input mechanism (B) includes: a guide carrier (V) mounted to the movable drive plate (2) for supporting the tapes; and a tape guide (X) removably mounted to the guide carrier, the

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tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes (See Modified Figure 2A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the guide carrier and tape guide taught by Ando et al. with the device feeder discloses by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract).

44. As to claim 7, Feldman does not disclose the guide carrier includes a first plurality of feature sets; and the tape guide includes a second feature for engaging with one of the first plurality of feature sets on the guide carrier to accommodate tapes with different widths.

45. Ando discloses the guide carrier (W) includes a first feature (Y; i.e. bolt); and the tape guide (X) includes a second feature (Z; i.e. opening) for engaging with one of the first plurality of feature sets on the guide carrier to accommodate tapes with different widths (See Modified Figure 2A). Ando does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the device feeder discloses by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract). It also would have

been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus.

46. As to claim 19, Feldman does not disclose the movable drive plate includes a first guide mechanism for accommodating the tapes along first edges of the tapes. However, Feldman does not specifically disclose and the input mechanism includes: a guide carrier mounted to the movable drive plate for supporting the tapes; and a tape guide removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes.

47. Ando et al. the input mechanism (2) includes: a guide carrier (W) mounted to the movable drive plate for supporting the tapes; and a tape guide (X) removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes (See Modified Figure 2A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the guide carrier and tape guide taught by Ando et al. with the device feeder disclosed by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract).

48. Claims 8-9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,666,365 to Feldman in view of U.S. Patent No. 5,598,986 to

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Ando et al. as applied to claims 6-7 and 19 above, and further in view of U.S. Patent No. 6,296,104 to Ito et al.

49. With respect to claim 8, Feldman does not disclose the guide carrier is formed of a ferro-magnetic material; and the tape guide includes magnets for removably attaching the tape guide to the guide carrier using a magnet force created between the magnets and the ferro-magnetic material.

50. Ando et al. discloses a component supply apparatus, including attaching the guide carrier and tape guide with feature sets (See Figure 2A).

51. Ito et al. discloses an electronic component feeding apparatus, including using magnets (214) in combination with bolts (213) and openings (211b) for removably attaching plates in a guide mechanism (See Figure 29; column 19, lines 20-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic attachment means taught by Ito et al. while attaching the guide carrier and tape guide of Ando et al. together in the device feeder of Feldman. The motivation would have been to provide increased support and stability to the apparatus by improving attachment strength.

52. As to claim 9, Feldman does not disclose each of the first plurality of feature sets includes a plurality of projections; and the second feature includes a set of openings formed on a bottom side of the tape guide for engaging with the plurality of projections.

53. Ando et al. discloses each of the first feature sets includes a projection (Y; i.e. bolt); and the second feature includes an opening (Z; i.e. opening) formed on a bottom side of the tape guide for engaging with the projection (See Modified Figure 2A). Ando

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does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the device feeder discloses by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus.

54. As to claim 20, Feldman does not disclose the guide carrier is formed of a ferro-magnetic material; and the tape guide includes magnets for removably attaching the tape guide to the guide carrier using a magnet force created between the magnets and the ferro-magnetic material or each of the first plurality of feature sets includes a plurality of projections; and the second feature includes a set of openings formed on a bottom side of the tape guide for engaging with the plurality of projections.

55. Ando et al. discloses a component supply apparatus, including attaching the guide carrier and tape guide with feature sets (See Figure 2A). Ando et al. also discloses each of the first feature sets includes a projection (Y; i.e. bolt); and the second feature includes an opening (Z; i.e. opening) formed on a bottom side of the tape guide

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for engaging with the projection (See Modified Figure 2A). Ando does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the device feeder disclosed by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus.

56. Ito et al. discloses an electronic component feeding apparatus, including using magnets (214) in combination with bolts (213) and openings (211b) for removably attaching plates in a guide mechanism (See Figure 29; column 19, lines 20-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic attachment means taught by Ito et al. while attaching the guide carrier and tape guide of Ando et al. together in the device feeder of Feldman. The motivation would have been to provide increased support and stability to the apparatus by improving attachment strength.

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57. Claims 13-14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,666,365 to Feldman as applied to claims 1-5, 10-12, 15-18, and 21-22 above, and further in view of U.S. Patent No. 6,082,603 to Takada et al.

58. With respect to claim 13, Feldman does not specifically disclose a cover tape mechanism for disposing of the removed cover tape; and a tape-presence sensor assembly disposed between the cover tape removal mechanism and the cover tape mechanism for detecting the removal of the cover tape off the tapes.

59. Takada et al. discloses a feeding apparatus, including the input mechanism includes: a cover tape mechanism for disposing of the removed cover tape (368); and a tape-presence sensor assembly (379) disposed between the cover tape removal mechanism (210) and the cover tape mechanism (368) for detecting the removal of the cover tape off the tapes (See Figure 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Feldman. The motivation would have been to better monitor the peeling and conveying of the cover tape.

60. As to claim 14, Feldman does not specifically disclose the tape-presence sensor assembly includes: a slot sensor mounted to the movable drive plate; a sensor flag plate rotatably mounted to the movable drive plate; and a tape-presence sensor roller rotatably mounted to the sensor flag plate wherein the sensor flag plate is clear of a slot in the slot sensor indicating the removal of the cover tape when the sensor flag plate enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged.

61. Takada et al. discloses a feeding apparatus, including the tape-presence sensor assembly includes: a slot sensor (378) mounted to the movable drive plate (50); a sensor flag plate (376) rotatably mounted to the movable drive plate (50); and a tape-presence sensor roller (372) rotatably mounted to the sensor flag plate (376) wherein the sensor flag plate is clear of a slot in the slot sensor (378) indicating the removal of the cover tape when the sensor flag plate (376) enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged (See Figure 27; column 29, line 62-column 30, line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Feldman. The motivation would have been to better monitor the peeling and conveying of the cover tape.

62. As to claim 23, Feldman does not specifically disclose a cover tape removal mechanism secured to the movable drive plate for removing a cover tape off the tapes to expose the micro devices; a cover tape mechanism for disposing of the removed cover tape; and a tape-presence sensor assembly disposed between the cover tape removal mechanism and the cover tape mechanism for detecting the removal of the cover tape off the tapes, the tape-presence sensor assembly including: a slot sensor mounted to the movable drive plate; a sensor flag plate rotatably mounted to the movable drive plate; a tape-presence sensor roller rotatably mounted to the sensor flag plate wherein the sensor flag plate is clear of a slot in the slot sensor indicating the removal of the cover tape when the sensor flag plate enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged.

63. Takada et al. discloses a feeding apparatus, including the tape-presence sensor assembly includes: a slot sensor (378) mounted to the movable drive plate (50); a sensor flag plate (376) rotatably mounted to the movable drive plate (50); and a tape-presence sensor roller (372) rotatably mounted to the sensor flag plate (376) wherein the sensor flag plate is clear of a slot in the slot sensor (378) indicating the removal of the cover tape when the sensor flag plate (376) enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged (See Figure 27; column 29, line 62-column 30, line 12); and the tape-presence sensor assembly includes: a slot sensor (378) mounted to the movable drive plate (50); a sensor flag plate (376) rotatably mounted to the movable drive plate (50); and a tape-presence sensor roller (372) rotatably mounted to the sensor flag plate (376) wherein the sensor flag plate is clear of a slot in the slot sensor (378) indicating the removal of the cover tape when the sensor flag plate (376) enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged (See Figure 27; column 29, line 62-column 30, line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Feldman. The motivation would have been to better monitor the peeling and conveying of the cover tape.

Double Patenting

64. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to

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identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

65. Claims 1-5, 10-12 15-18, and 21-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S.

Patent No. 6,666,365 to Feldman. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims are drawn to similar device feeder apparatus, with similar components.

66. Claims 6-7 and 19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,666,365 to Feldman in view of U.S. Patent No. 5,598,986 to Ando et al. Feldman does not specifically disclose a guide carrier and tape guide. Ando discloses a component supply apparatus, including the input mechanism (B) includes: a guide carrier (W) mounted to the movable drive plate (2) for supporting the tapes; and a tape guide (X) removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes (See Modified Figure 2A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the guide carrier and tape guide taught by Ando et al. with the device feeder discloses by Feldman. The motivation would have been to allow the guide to be adjustable in order to modify the apparatus to be

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functional with tapes of different sizes (Feldman; see abstract). It also would have been obvious to provide duplicate feature sets.

67. Claims 8-9 and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,666,365 to Feldman in view of U.S. Patent No. 5,598,986 to Ando et al. and further in view of U.S. Patent No. 6,296,104 to Ito et al. Feldman does not disclose the guide carrier is formed of a ferro-magnetic material; and the tape guide includes magnets for removably attaching the tape guide to the guide carrier using a magnet force created between the magnets and the ferro-magnetic material or each of the first plurality of feature sets includes a plurality of projections; and the second feature includes a set of openings formed on a bottom side of the tape guide for engaging with the plurality of projections. Ando et al. discloses a component supply apparatus, including attaching the guide carrier and tape guide with feature sets (See Figure 2A). Ando et al. also discloses each of the first feature sets includes a projection (Y; i.e. bolt); and the second feature includes an opening (Z; i.e. opening) formed on a bottom side of the tape guide for engaging with the projection (See Modified Figure 2A). Ando does not disclose a plurality of feature sets, however, it is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of the guide carrier and tape guide taught by Ando et al. with the device feeder discloses by Feldman. The motivation would have been to allow the guide to be adjustable in order

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to modify the apparatus to be functional with tapes of different sizes (Feldman; see abstract). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the feature sets taught by Ando et al. in the combination. The motivation would have been to provide an increased reinforcement to the connection between the guide carrier and tape guide, stabilizing the apparatus. Ito et al. discloses an electronic component feeding apparatus, including using magnets (214) in combination with bolts (213) and openings (211b) for removably attaching plates in a guide mechanism (See Figure 29; column 19, lines 20-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic attachment means taught by Ito et al. while attaching the guide carrier and tape guide of Ando et al. together in the device feeder of Feldman. The motivation would have been to provide increased support and stability to the apparatus by improving attachment strength.

68. Claims 13-14 and 23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,666,365 to Feldman in view of U.S. Patent No. 6,082,603 to Takada et al. Feldman does not specifically disclose a slot sensor, a sensor flag, or a tape-presence sensor roller. Takada et al. discloses a feeding apparatus, including the input mechanism includes: a cover tape mechanism for disposing of the removed cover tape (368); and a tape-presence sensor assembly (379) disposed between the cover tape removal mechanism (210) and the cover tape mechanism (368) for detecting the removal of the cover tape off the tapes (See Figure 27); the tape-presence sensor assembly includes:

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a slot sensor (378) mounted to the movable drive plate (50); a sensor flag plate (376) rotatably mounted to the movable drive plate (50); and a tape-presence sensor roller (372) rotatably mounted to the sensor flag plate (376) wherein the sensor flag plate is clear of a slot in the slot sensor (378) indicating the removal of the cover tape when the sensor flag plate (376) enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged (See Figure 27; column 29, line 62-column 30, line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensor assembly taught by Takada et al. with the device feeder disclosed by Feldman. The motivation would have been to better monitor the peeling and conveying of the cover tape.

Conclusion

69. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,881,968 to Hsu, U.S. Patent No. 7,220,095 to Lyndaker et al., U.S. Patent No. 5,941,674 to Briehl, U.S. Patent No. 5,268,059 to Olsen, U.S. Patent No. 5,419,802 to Nakatsuka et al, U.S. Patent No. 5,299,902 to Fujiwara et al., U.S. Patent No. 6,474,527 to Miller, U.S. Patent No. 6,202,728 to Takada et al., and U.S. Patent No. 6,139,246 to Briehl are related micro device feeders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly K. McClelland whose telephone number is (571) 272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Fri..


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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